

concept) was to allow providers to create new and different service offerings independent of the manufacturer and without waiting for the manufacturer to develop a new software generic. For example, a recent Bell Atlantic-sponsored tutorial on the intelligent network states the following under a general heading entitled “Benefits of Intelligent Networks”:³⁴

AIN technology uses the embedded base of stored program-controlled switching systems and the SS7 network. The AIN technology also allows for the separation of service-specific functions and data from other network resources. This feature reduces the dependancy on switching system vendors for software development and delivery schedules. Service providers have more freedom to create and customize services. [Emphasis added]

Or, as the Commission itself reported, “. . . the BOCs contend that a major goal of AIN is to free them from the ‘tyranny’ of the switch manufacturer.”³⁵ Even more telling, in an earlier portion of his affidavit that deals with the AIN, Mr. Deere states that “Advanced Intelligent Network . . . is a vendor independent network architecture deployed by SWBT that provides capabilities for creation of custom services that are invoked by SS7 messages from a switch to a SCP database.”³⁶ [Emphasis added.]

Thus, despite Mr. Deere’s assertions to the contrary, the intelligent network concept enables the BOCs, such as SWBT, to modify service logic in order to customize services for specific end user or carrier customers. And, it allows it to do so without violating the switch manufacturer’s warranty and, apparently, without jeopardizing network reliability. As I showed

³⁴ “The Intelligent Network Tutorial,” URL-<http://www.iec.org/tutorial/ain/>, downloaded February 2, 1997.

³⁵ Notice of Inquiry, 6 FCC Red 7256, at para. 5.

³⁶ Deere Affidavit at 30, para. 105.

earlier, it is this ability to fine tune or customize their local networks that enables them to favor (a) their own interexchange operations over their interexchange carrier competitors and/or (b) their own end user customers over the end user customers of their interexchange competitors.

It could be argued that SWBT's ability to discriminate in this way would be offset if competitors could deploy their own SCPs and associated service logic/data bases and have them accessed by the SWBT switch via SS7 messages. However, the BOCs have, predictably, opposed such "logical unbundling" on technical feasibility grounds and, in particular, on the grounds of potential harm to the network. In his affidavit, Mr. Deere notes that SWBT, in its Statement of Generally Available Terms and Conditions, has offered to allow local service providers ("LSPs") to develop AIN applications on SWBT's Integrated SCP (i.e., to place their own service logic on SWBT's SCP) using SWBT's LSP AIN Application Creation Service.³⁷ In other words, the competitor is forced to reveal technical information to its competition at the time the service is being developed and is subject to whatever limitations and constraints that SWBT may build into the application creation environment -- no matter how arbitrary or discriminatory they might be. Furthermore, the competitor is forced to place its proprietary software and sensitive end user information under the direct control of its competitor, SWBT. Finally, the offer does nothing to ameliorate a number of other critical concerns I raised earlier including outright refusals or delays by SWBT in providing access to certain AIN triggers or in conveying certain types of signaling messages that a competitor might need in the development of its service. As I pointed out before, because of the technical complexity of the SS7/AIN

³⁷ Deere Affidavit, at 30, para. 105.

architecture, the critical role it plays as the nervous system of the network, and the necessarily more limited technical knowledge of outsiders, determining whether a particular refusal or delay is justified becomes an almost impossible task for competitors and regulators alike. Thus, I strongly disagree with Mr. Deere's conclusion that large scale discrimination is not feasible to implement and would be easily detectable.

Another area with which I strongly disagree is Mr. Deere's conclusions regarding the provision of local distribution facilities, e.g., unbundled local loops. Essentially, he argues that (a) because the local loop facilities used to serve SWBT's are co-mingled with the local loop facilities used by competitors and utilize the same distribution and feeder systems and (b) because the loops are assigned by automatic systems that do not recognize the identity of the requesting carrier or customer, discrimination would be difficult to carry out and easy to detect.

However, just as the local exchange network is changing through the addition of increased intelligence that allows individual fine tuning or customization of services to meet specific customer requirements, so are the local distribution facilities. Rather than simply carrying ordinary analog voice and low-speed data signals, twisted pair copper loops are being used to carry high-speed digital signals as well. The products which permit the use of twisted pair copper loops for carrying high-speed digital signals are often referred to generically as xDSL, where DSL is an acronym for Digital Subscriber Line. Varieties of xDSL include: High Data Rate DSL ("HDSL"), Symmetric DSL ("SDSL"), Asymmetric DSL ("ADSL"), Very High Data Rate DSL ("VDSL"), and Rate Adaptive DSL ("RADSL").³⁸ All of these products use

³⁸ SWBT has announced its intention of offering ADSL-based services in the third quarter of 1997. See <http://www.swbell.com/News/Regulatory/Disclosures/fccadsl.html> (downloaded

sophisticated digital signal processing and other advanced techniques to make use of frequency ranges on the twisted pair cable that lie above the frequency range normally used by voice. Through the use of multiplexing, these systems can be used to carry a mixture of local, intraLATA long-distance, and interLATA long-distance voice, data, image, and even video services directly to customer locations.

Since all of these systems attempt to squeeze additional capacity out of loop plant that was designed to carry less demanding voice signals, their performance is dependent on the condition of the individual copper pairs and the presence of other digital signals. This means that many copper lines may require individual treatment in terms of reconditioning or rebuilding in order to carry high-speed digital signals directly to the customers' premises. It also means that the performance, once installed, is dependent upon how other digital signals (e.g., standard T1 and ISDN) are carried within the same cable sheath or binder group. Because of this need for individual treatment and the susceptibility of the systems to interference from other signals within the cable, there is a significantly increased risk that SWBT will discriminate in favor of its own competitive operations. The risk increases because SWBT alone controls the pace and diligence with which the reconditioning or rebuilding is accomplished and the placement of digital signals within the cable itself.

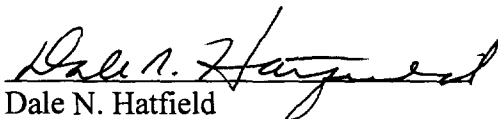
VI. Summary and Conclusions

To summarize, because of the increased complexity of the required forms of interconnection, incumbent local exchange carriers have an increased ability to discriminate and

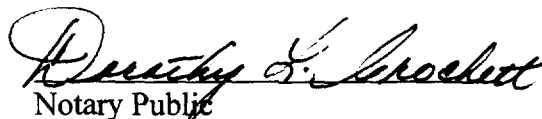
April 21, 1997).

to raise unfounded claims of technical harm and technical infeasibility in the provision of advanced forms of interconnection. Thus, they have the power to thwart or delay the development of advanced competitive long-distance services that are increasingly critical to interexchange carriers in differentiating their services in an intensely competitive market. Because these advanced forms of interconnection go far beyond the basic forms of interconnection required to achieve equal access following divestiture, past experience with the interconnection of traditional voice and data networks will be less useful as a regulatory tool for preventing, detecting, and remedying discrimination.

I hereby swear, under penalty of perjury, that the foregoing is true and correct, to the best of my knowledge and belief.


Dale N. Hatfield

Subscribed and sworn before me this 30th day of April, 1997.


Notary Public

My commission expires: 8/31/97

The Merriam-Webster



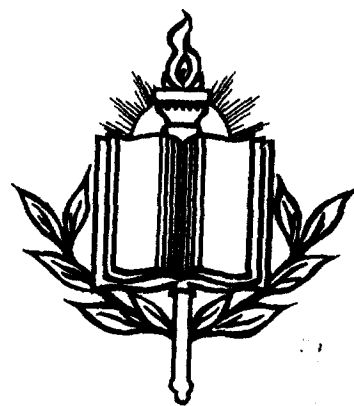
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pro-vi-sion \prə'vīʒən, prō'-\ n [ME, fr. MF, fr. LL *provisio*, 'provisive action of providing, provision for the future']
 1 a : promotion to office by an ecclesiastical superior : appointment to a benefice not yet vacant (through papal ~ he was made bishop —G.C.Sellery) b : S : a gift by will or deed to one as heir who would not otherwise ~ compare HEIR OF PROVISION c usu cap : various laws enacted in the 13th and early 14th centuries resembling (the laws which prohibit and forbid or is the king with their consent (*Provisions of Oxford*) 2 act or process of providing (the ~ of a play area for children) (the ~ of free speech is . . . a weapon of enlightener Lucius Garvin) b : the quality or state of being provided beforehand (cast upon the world without ~ —J.H.N. G.) c : a measure taken beforehand ; PREPARATION (. . . centralization —Vera M. Dean) (~ for inserting . . . —Steele) 3 : a stock of needed materials or supplies (expecting water or ~ at a designated spot —Irving Stone) 4 : a stock of food ; VICTUALS —usu. used in pl. (a barrel ~ —Green Peyton) 5 : a stipulation (as a clause in a contract) made in advance ; PROVISIO (bequeathed to with the ~ that it be preserved) (this ~ is one of funds importance in our legal ~ system —E.N.Griswold) ; CONDITION
 2 provision \ˈvɪ wɪ : to supply with provisions ; VICTUAL to the island —Ben Holt) (have an ample ~ed food betrays their bucolic childhood —Amar, Mercury)
 provision account n : RESERVE ACCOUNT 1
 pro-vi-sion-al \-zhə-nəl, -zhō-nəl/ adj [ˈproviʒən-
 1 : provided for a temporary need ; suitable or acceptable in the existing situation but subject to change or nullification ; TENTATIVE, CONDITIONAL (a ~ government set up in temporary freedom from enemy control) (a ~ appointment) (a ~ clause) (a ~ interpretation of the data) (their beliefs are ~ and ~ —Walter Lippmann) 2 archaic : marked by providence (this ~ care in every species —Oliver Goldsmith) 3 : of or relating to special or extraordinary legal proceedings allowed before final judgment to protect the interests of one or more parties in an action at law as in the legal procedure of New York and some other remedies had by order of arrest, warrant of attachment, injunction, or appointment of a receiver) 4 postage stamp : overprinted or issued for temporary use as a substitute for a regular issue that has not yet been made that has not yet been received in the country or territory where it is to be used ~ contrasted with DEFINITIVE —p
 sion-al-ly \-zhə-nēl, -zhō-nēl, -lɪ/ adv
 2 provisional order n : a provisional postage stamp
 provisional order n : an order (as on a matter of local concern normally dealt with by a private bill) issued by a governmental agency under powers granted by parliament having the force of new subjects to specific parliamentary financial bills by means of a provisional order confirmation
 pro-vi-sion-ary \-zhə-nərɪ, -rɪ/ adj [ˈproviʒən-
 1 : PROVISIONAL
 pro-vi-sion-er \-zhə(n)ə(r)/ n -s : a furnisher of provisions ; PURVEYOR, VICTUALLER (the . . . farmers were the chief of the armies —A.D.Graeff)
 pro-vi-sion-ment \-zhənmənt/ n -s : supply of provisions (carrying little ~ —Willis Cather)
 provision tree n : a tropical American tree (*Pachira aquatica*) of the family Bombacaceae having large heavy russet with edible brown seeds
 pro-vi-so \prə'vɪʒə, prō'-\ n, pl provisions or prov [ME, fr. L, provided (abl. of *provisum*, neut. of *provisus* part. of *providere* to provide), in *provisis*, quod *providetur*, phrase with which the medieval and modern legal documents begin more at PROVIDE] 1 : an article or clause (as statute, contract, or grant) that introduces a condition, limitation, or restriction and usu. begins with the word *proviso* (a ~ . . . to modify the operation of that part of the statute —G.D.Oxner) —compare PURVIEW 2 ; a conditional limitation ; RESERVATION (expresses the belief only with a skepticism —H.R.Finch) syn see CONDITION
 pro-vi-sor \prə'vɪzə(r)/ n -s [ME *provisour*, fr. AF, ML, AF *provisour* ecclesiastical provisor, fr. ML *provisor* ecclesiastical provisor, guardian, administrator, fr. L, one provides, fr. *provisus* (past part. of *providere* to provide) —more at PROVIDE] 1 : one having a provision esp. papal benefice not yet vacant ~ compare PROVISION 1 a 2 : having charge of seeing provisions (as for an army, religious house) : PURVEYOR, STEWARD 3 obs : one provides (as care, protection, sustenance) ; GUARDIAN 4 cleric acting as an assistant to or vicar for an archbishop : bishop : an ecclesiastical deputy
 pro-vi-so-ri-ly \-zərə-lɪ/ adv : in a provisory manner
 pro-vi-so-ry \-zərɪ, -rɪ/ adj [F or ML; F *provisoire*, fr. *provisioris*, fr. L *provisus* (past part. of *providere* to provide) —more at PROVIDE] 1 : containing or subject provision ; CONDITIONAL (a ~ clause) 2 : PROVISION (human institutions as ~ and precarious —Edmund Wilson) 3 : vitamin D (as ~ and precarious —Edmund Wilson) 4 : a precursor (vitamin that can be converted into a vitamin in the organism) (a ~ of vitamin D)
 provitamin \prə'vɪtəmɪn/ n : provitamin of vitamin A ; esp : CAROTENE
 provide \prə'vɪd/ v
 pro-vo \prə'vəʊ/ archaic var of PROVOST
 provocateur n [F (agent) provocateur] : AGENT PROVOCATOR
 prov-o-ca-tion \prə'vɪkəʃən/ n -s [ME *provoocation*, fr. *provocation*, fr. L *provocation*, *provocatio*, fr. *provocatus* (part. of *provocare* to call forth, provoke) + *-ion*, *-io* -more at PROVOKES] 1 : the act or process of provoking ; STIMULATION, INCITEMENT (~s to further thought about one's own dilemmas —E.R.May) (ready to smash them to pieces : the slightest ~ —Havelock Ellis) (they every movement was ~ —S.B.Kaiser) 2 archaic : APPEAL ; esp : an appeal higher court b : the right of a Roman citizen condemned criminal action to appeal, as in Greek and Roman law c : a sexual desire (her gusts and postures became more violent and ~ —C.R.Nordhoff & J.N.Hall) d : a
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Webster's Encyclopedic Unabridged Dictionary of the English Language



The dictionary entries are based on the First Edition of *The Random House Dictionary of the English Language*

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proto-zo-on (prō'zō'zōn, -zōn), *n.*, *pl.* **-zo-a** (-zō'zō).
protozoan. [sing. of Protozoa] —**pro'to-zo-on'al**,
adj.

pro-trac-tor (prō trakt'or), *v.t.* 1. to draw out or lengthen
in time; extend the duration of; prolong. 2. *Anat.*
to extend or protrude. 3. (in surveying, mathematics,
etc.) to plot and draw (lines) with a scale and a pro-
tractor. [*< L. protrahere*] drawn forth, prolonged
(ptp. of *protrahere*). See **PRO-TRACT** —**pro-trac-tor-**
ed-ly, *adv.* —**pro-trac-tor-ed-ness**, *n.* —**pro-trac-tor-**
able, *adj.* —**pro-trac-tive**, *adj.*

—**Syn.** 1. continue. See **lengthen**. —**Ant.** 1. curtail.
pro-trac-tile (prō trakt'il), *adj.* capable of being
protracted, lengthened, or protruded. [*protrahere* +
-ile] —**pro-trac-tile-ly**, *n.*

pro-trac-tion (prō trakt'shən), *n.* 1. act of protracting; prolongation;
extension. 2. protrusion. 3. that which is protracted. [*< L. protrahere*] —**pro-trac-tion-**
al, *adj.* —**pro-trac-tion-ist**, *n.*

pro-trac-tor (prō trakt'or), *n.* 1. Protractor (def. 2)
one who or that which protracts. 2. (in surveying, mathematics, etc.) an instrument
having a graduated arc for plotting or measuring angles
on paper. 3. *Anat.* a muscle which causes a part to
protrude. [*< L. protrahere*] —**pro-trac-tor-**
-ed-ly, *adv.* —**pro-trac-tor-ed-ness**, *n.*



pro-tru-de (prō trūd'ed), *v.*, **-trud-ed**, **-trud-ing**.
—**v.i.** 1. to project. —**v.t.** 2. to thrust forward; cause
to project. [*< L. protrudere*] (to) thrust forward, equiv.
to **pro-tru-sion** + **-trudere** (to thrust) —**pro-trud-ent**, *adj.*
—**pro-tru-sion** (prō trūd'shən), *n.* —**pro-tru-sion-**
al, *adj.* —**pro-tru-sion-ist**, *n.*

pro-tru-sion (prō trūd'shən), *n.* 1. act of protruding;
state of being protruded. 2. that which protrudes or
projects. [*< L. protrudere*] (ptp. of *protrudere* to
protrude) + -ion

—**Syn.** 2. jut, projection, bulge, protuberance.
pro-tru-sive (prō trūd'siv), *adj.* 1. projecting or
protruding; thrusting forward, upward, or outward.
2. obtrusive. 3. *Archaic*. pushing forward; having
propulsive force. [*< L. protrudere*] (ptp. of *protrudere*
to protrude) + -ive] —**pro-tru-sive-ly**, *adv.* —**pro-**
-trusive-ness, *n.*

pro-tu-ber-ance (prō tūd'bar'əns, -tūd'bar'), *n.* 1.
condition, state, or quality of being protuberant.
2. a protuberant part or thing; projection or bulge.
[*protrudere* (ANT) + -ance] —**pro-tu-ber-ant-**
-ial, *adj.* —**pro-tu-ber-ant-ly**, *adv.*

—**Syn.** 2. protrusion, swelling.
pro-tu-ber-ant-ly (prō tūd'bar'ənt-ly), *adv.* —**pro-**
-tuberant-ly, *adv.*

pro-tu-ber-ate (prō tūd'bar'at, -tūd'bar'), *v.*, **-at-**
-ed, **-ing**. 1. to bulge out, forming a protuberant projection.
[*< L. protrudere*] (ptp. of *protrudere* to protrude)
+ -ate] —**pro-tu-ber-ant**, *adj.*

pro-tu-ber-ant (prō tūd'bar'ənt, -tūd'bar'), *adj.* bulg-
ing out beyond the surrounding surface; protruding;
projecting; protuberant eyes. [*< L. protrudere*] (s.
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-TUBERANT —**pro-tu-ber-ant-ly**, *adv.*

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ing out beyond the surrounding surface; protruding;
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of *protrudere*), ptp. of *protrudere* to swell. See **PRO-**
-TUBERANT —**pro-tu-ber-ant-ly**, *adv.*

pro-ty-le (prō'til, -til), *n.* the hypothetical, primordial
substance that supposedly differentiated into the
chemical elements. Also, **pro-tyl** (prō'til). [irreg. *<*
Gk. protos + *tylos* material matter]

prout (prout), *adj.* 1. feeling pleasure or satisfaction
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proust-ite (prō'stīt), *n.* Mineral. a mineral, silver
arsenite sulfide, Ag₃AsS₃, occurring in scarlet crystals
and masses: a minor ore of silver; ruby silver. [named
after J. L. Proust (1754-1820), French chemist; see -ite]

Prov., 1. Provincial. 2. Province. 3. Proverbs. 4.
Province. 5. Provost.

prov., 1. province. 2. provincial. 3. provisional.
4. provost.

pro-vas-cu-lar tis/sue (prō vas'kyū-lar), *n.* procam-
bium. [*pro-* + *vacular*]

prove (prōv), *v.*, **proved**, **proved** or **prov-en**, **prov-**
-ing. 1. to establish the truth or genuineness of,
as by evidence or argument: *to prove one's claim.* 2.
Law. to establish the authenticity or validity of (a
will); probate. 3. to give demonstration of by action.
4. to subject to a test, experiment, comparison, analy-
sis, or the like, to determine quality, amount, accepta-
bility, characteristics, etc.: *to prove ore.* 5. to show
(oneself) to have the character or ability expected of
one, esp. through one's actions. 6. *Math.* to verify
the correctness or validity of by mathematical demon-
stration or arithmetical proof. 7. Also, **proof**. *Print.*
to take a trial impression of (type, a cut, etc.). 8.
to cause (dough) to rise to the necessary lightness.
9. *Archaic*. to experience. —**v.i.** 10. to turn out: *The
experiment proved to be successful.* 11. to be found by
trial or experience to be: *His story proved false.* 12. (of
a thing) to rise to a specified lightness: *Leaves covered
until it has proved.* [ME *< OF* *prover* (*< L. probare*
to try, test, prove, approve, deriv. of *probus* good. See
PROBITY) —**pro-v-a-bil-ity**, **pro-v-a-ble-ness**, *n.*
—**pro-v-a-ble**, *adj.* —**pro-v-a-bly**, *adv.* —**pro-v-en-ly**,
adv. —**pro-ver**, *n.*

—**Syn.** 1. demonstrate, confirm, substantiate, verify.
—**Ant.** 1. disprove.

pro-ven-ance (prō'və-nāns), *n.* place or source of
origin: *The provenance of the ancient manuscript has
never been determined.* [*< F*: *proven*, deriv. of *provenant*,
pp. of *provenir* *< L. provenire* to come forth; see -ANCE
+ -ANCE]

Pro-ven-çal (prō'vən-sāl, -sāl), *n.* 1. of or pertaining
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SECOND EDITION

Prepared by

J. A. SIMPSON *and* E. S. C. WEINER

VOLUME XII

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†**provexity**. *Obs. rare*—⁰. [Ultimately from *L. proēctus* u. advanced, pa. pple. of *provehēre*: see **PROVECTION**. For the form, cf. *convex*, *convexity*.] An advanced condition or state.

1674 *Blount Glossary*, (ed. 4). *Provexity*... greatness of age, the being well grown in years, or well studied in any Art.

†**provey**, *obs.* variant of **PURVEY** v.

†**provable**, *a. Obs. rare*—¹. [a. OF. *provable* (13th c. in Godef.), var. of *pourveable*, 'qui pourvoit à tous les besoins': see **PURVEYABLE**.] ? Suitable, convenient; or ? get-at-able.

1450 *Paston Lett.* I, 176. I desire that und [= if] John Herney... can mete wyth Dallyng, that fals unde echeter, in onye place provable, that he may [be] by force brought to Castr... to be kept yn hold.

†**proviante**. *Sc. Obs. rare*. Also 4 **pruwiante**. [a. OF. *proviante* (13th c. in Godef.), variant of *por-*, *pourveance*, -*voiance*, semi-popular representatives of *L. providentia*: see **PURVEYANCE**.] Provision; providence.

c. 1375 *Sc. Leg. Saints* xxxiii. (George) 213 In þe tyme come a knyght... I treu, of goddis pruwiante—Quhare þe maydyne abad hir chance. 1552 *LYNDESEY Monarchie* 6197 Thocht presently, be Goddis pruwiante, Beistis, fowlis, and fyschis in the seis, Ar necessar, now, for mannys sustenance.

proviand ('proviand). Also 7 **proveant**, 9 **proviand**. [a. G. *proviand*, Du. *proviand*, in It. *provianda*, apparently an altered form of *provenda* **PROVEND**, influenced by OF. *proveant* providing, *proveance* provision. Brought into Eng. by soldiers who served in the Thirty Years' War, 1618-48.

The German word is treated by Kluge as from the It.; but *provenda* is not in Florio 1598. 1611, who has only *provenda* 'proviander for horses or fodder for cattle'. Dietz referred the word to *L. providenda* things to be provided.]

Provision; food supply, esp. for an army; commissariat; = **PROVAND**, **PROVANT** 1.

1637 *R. MONRO Exped.* I, 7 Receiving all necessities fitting for our march, as ammunition, proviant, and waggons, for our baggage. 1647 *Sc. Acts Chas.* I (1814) VI, 270. That all Regiments... be put and kept in equality, either in Money, Proviant, or Provision, according to their strength. 1832 *CARLYLE in Froude Life* (1882) II, xii, 313 We want for nothing in the way of earthly proviant, and have many reasons to be content and diligent. 1885 *A. FORBES Souvenirs* (1894) 135 On one occasion, before Plevna, his imperturbable coolness stood him in good stead in the matter of 'proviand'.

b. *attrib.* = **PROVANT** 3a.

1637 *R. MONRO Exped.* I, 5 We were entertained on proviant bread, beer and bacon. 1870 *Daily News* 5 Dec., It was the wheel of his [own] gig that he had seen stuck on to the proviant waggon. 1880 *A. FORBES in 19th Cent.* VII, 233 Marshall was hustling proviant columns up along the line of communications.

pro-vicar, -**vicariate**: see **PRO-** 4.

pro-vice-chancellor. [f. **PRO-** 4 + **VICE-CHANCELLOR**.] One of the deputies appointed by the vice-chancellor of a university on his election; an assistant or deputy vice-chancellor.

1660 *Wood Life* 30 June (O.H.S.) I, 320 The same day the doctors and provicechancellor at home put off the Act. 1663 *Ibid.* 23 Sept. 492 When they were there the provicechancellor and the 24 proproctors placed them. 1721 *AMHERST Ternæ Fil.* No. 35 (1754) 185 The gentlemen... went to Dr. Dobson, president of Trinity college, who was at that time pro-vice-chancellor. 1898 *Daily News* 10 Oct. 91 The new Vice-Chancellor... appointed as his Pro-Vice-Chancellors the Principals of Hertford, the Provost of Queen's, the Master of University, and the President of Corpus.

providable (prə'vaɪdəb(ə)), *a. rare*. [f. **PROVIDE** v. + -ABLE.] Capable of being provided.

1891 *Dict. Nat. Biog.* XVIII. 224-2 He would have provided for Rousseau had Rousseau been providable for.

providator, **providatory**: see **PROVEDITOR**.

provide (prə'vaɪd), *v.* Also 5-6 **provyde**, *Sc. -wyde*, -*wide*, 6-*vyd*. [ad. *L. providēre* to see before, foresee, look after, attend to, be cautious, f. *prō*, **PRO-** 1 + *vidēre* to see. Cf. **PURVEY**, a doublet of this through OF., in earlier Eng. use. *Provide* was app. introduced in 15th c. as a direct repr. of the *L.* verb in certain senses, and its use may have been promoted by the fact that *providence* was already in use for *purveyance*.]

1. †1. *trans.* To foresee. *Obs.*

1423 *Jas. I. Kingis Q.* ix, 30 vncouthly hir werdes sche deuidith, Namly In south, that seildin ought prouidith. 1545 *RAYNOLD Byrth Mankynde* 91 Evident and sufficient signes, whereby maye be provided & foreseene the aborcement before it come. 1607 *B. JONSON Volpone* Ded., Seuer and wiser patriots, providing the hurts these licentious spirits may doe in a state. 1640 *YORK Union Hon.* 137 Of especiall counsell and advice, in providing and foreseeing the event of any deepe designs.

2. *intr.* To exercise foresight in taking due measures in view of a possible event; to make provision or adequate preparation. *Const. for*, *against*.

c. 1407 *LYDG. Reson & Sens.* 3556 Hugel boolyis of metal... Brent[en] al that kam be-ayde: Ther koude no man hym provyde To save him that he was bent. 1432-50 *tr. Higden (Rolls)* III, 47 Men of Lacedemonia provide for a batelle ageyne men of Micena. 1529 *MOHE Dialoque* I. Wks. 132/2 Go to Christes gospell & luke on his first miracle, whither he might not have provided for wine without miracle. 1568 *GRAFTON Chron.* II, 680 The olde adage, sayng in tyme of peace, provide for war, and in tyme of war, provide for peace. 1665 *BOYLE Occas. Refl.* II, xi. (1848) 131 We may be often sollicitous to provide against many Evils and Dangers that possibly may never reach us. 1796 *BURKE Corr.* (1844) IV, 393 The first duty of a state is to provide for its own conservation. 1878 *JEVONS Prim. Pol. Econ.* I, §2, 10 Suffering from misfortunes which could not have been provided against. 1883 *E. T. PAYNE in Law Times* 27 Oct. 412/2 An inn or hotel is an establishment, the proprietor of which undertakes to provide for the entertainment of all comers, especially travellers.

†b. To see to it or take care beforehand; to make provision (that something shall not happen). *Obs.*

c. 1430 *LYDG. Min. Poems* (Percy Soc.) 186, I will be ware and afore provide, That of no fowler I will no more be japed. 1509 *FISHER Flyn. Sermon* c. 118 Richmond Wks. (1876) 296 To... provide by her owne commendement that nothyng shoulde lacke. 1538 *STANKE England* II, ii, 181 We must prouyd... that we be no poyntyle he vourge upon the popal any such authoryad tyranie. 1573-80 *BARNET Alw.* P. 801 To provide that a thing happen not, *precauto*. *Ibid.* 803 To provide that one take no harme, *cautela*.

c. To make it, or lay it down as, a provision or arrangement; to stipulate that. Cf. **PROVIDED** 5, **PROVIDING** *pr. pple.*, **PROVISION** 5.

1423 [see **PROVIDING** *pr. pple.*] 1560 *DAUS tr. Sleudane's Comm.* 114 b, The Mayers wyfe of the cite provided in her wyll, that she should be buried without any pompe or noyse. 1598 *DAVYNGLET tr. Leslie's Hist. Scot.* I, (S.T.S.) 116 Q. 9 a our lawis provydes, that the eldest succeede. 1829 *MACAULAY Hist. Eng.* I, 13 Another regulation, providing, that every person who was found slain should be supposed to be a Frenchman, unless he were proved to be a Saxon. 1891 *Law. Rep., Weekly Notes* 72/2 The clause did not provide that the costs of references... should be in the discretion of the arbitrators.

II. 3. *trans.* To prepare, get ready, or arrange (something) beforehand. *Now rare*.

c. 1420 *LYDG. Assembly of Gods* 216 What pyne or greet ye for me proude, Without any groyng I shall hit abyde. 1470 *HENRY Wallace x.* 620 Wallace in haist prouydut son his ost. 1526 *Pilgr. Perf.* (W. de W. 1531) 8 b, Of certayne benefytes that god hath prouyded for vs. 1535 *COVERDALE Prov.* vi, 7 In the sommer she prouideth hir meate, & gathereth hir foode together in y^e harvest. 1697 *DRYDEN Virg. Georg.* I, 271 The wise Ant her wintry store provides. 1809 *MALKIN Gil Blas* v. 1, § 103 He had provided a gown of coarse dark cloth, and a little red horse-hair beard.

†4. *intr.* To prepare, make preparation, get ready. *Const. with inf.*, or *absol.* *Obs.*

1493 *Peironilla* (Pynson) 105 Fellicula gane afore prouyde, Maure flaccus, to lyue in maydynhed. 1568 *GRAFTON Chron.* II, 165 He prouyded to sende men and victualles to strengthen the castels of Flynt and Rutland. 1601 *R. JOHNSON Kingd. & Commu.* (1603) 195 Let them not thinke to begin anie long warre, much lesse to continue it, unless they thinke thoroughly provide aforehand. 1616 *HIERON Wks.* I, 589 You respectiue taluing vs, your providing to entertaine vs. 1626 *B. JONSON Staple of N.* iv, 1 But stay, my Princesse comes, prouide the while, I'll call for't anon. 1692 *tr. Sallust* 116 He toyls, provides, and... sets all his Trains and Engines at work by Treachery to ruine Hiempsal. 1727 *POPE Th. Var. Subj.* Swift's Wks. 1755 II, i, 231 Very few men... live at present, but are providing to live another time.

†b. *trans.* with *vbl. sb.* *Provide your going* = prepare or make ready to go). *Obs.*

1606 *SHAKS. Ant. & Cl.* III, iv, 36 Provide your going, Choose your owne company, and command what cost Your heart has mind to.

5. *trans.* To supply or furnish for use; to yield, afford. *Const. † to (obs.) for*, or with *dative*.

1447 *BOKENHAM Seyntyng* (Roxb.) 37 Al that longth to thy necessitye shal be prouydyd be god and me. 1538 *STANKE England* I, 10 Al thyng that God and nature hath prouydyd to hym. 1552 *Bk. Comm. Prayer, Communion*, The bread and wyne for the Communion shall be prouyded by the Curate, and the churchwardens, at the charges of the Parishes. 1581 *in Confer.* III, (1584) Riv, Provide me ynke and paper, and I will write. 1634 *MILTON Comm.* 186 Such cooling fruit As the kind hospitable Woods provide. 1772 *JUNUS Lett.* lxviii. (1820) 344 This very act affordeth a remedy for such persons. 1898 *BESANT Orange Girl* II, xxvi, The contractors... do honestly provide the convicts the rations prescribed by the Government.

6. To furnish or appoint (an incumbent) to a vacant benefice (rarely, a person to a pension); esp. of the pope: To appoint (a person as successor) to a benefice not yet vacant, thus setting aside the right of the patron. Cf. **PROVISION** 5b, **PROVISOR** 1. *Now only Hist.*

1388 *Act 12 Rich. II.* c. 15 Item qe null liege du Roy... passe le meer pur soy prouider ou purchacer aucun benefice de seint Eglise ou cure ou sacre cure en le dit roialme. 1426 *Paston Lett.* I, 25 Ther arnii other persons provided to the same byshopricke yet lyving, before my seyed adversarie. 1580 *Reg. Privy Council Scot.* III, 324 His brother german, being lauchfullie provided to a yeirliche pensiuon... was slane... in quhis place the said Alexander, being provided to the said pensiuon, brukkit the samin peciabilie. 1593-4 *Exch. Rolls Scot.* XXII, 393 Johnne Balfour, provided of auld to the chapelanie of Sanct Thomas. 1639 *SPORTSWOOD Hist. Ch. Scot.* II, (1677) 30 Shevez posted to Rome... and was himself provided to the Archbishopricke. 1887 *LURTON Life* Culet 121 He was provided in 1504, to the vacant see of St. David's. 1899 *TRIVELIAN Eng. Age* Wycheffe 120 The Papal power of 'providing' to benefices.

III. 7. To equip or fit out (a person, etc.) with what is necessary for a certain purpose; to furnish or supply with something implied. In quot. 1628, to provide or furnish with a lodging.

1465 *in Exch. Rolls Scot.* VII, 321 note, Gevin... in parte of sustentacion of him unto the tyme that he be bettir providit, ten poundis. 1536 *MS. Acc. St. John's Hosp., Canterb.*, Payd to Colney for to provide hym selfe away xijd. 1588 *PARKER tr. Mendoza's Hist. China* 121 They take so much fish, that they do prouide the whole kingdome for all the yere. 1628 *EAM. MANCH. in Buckle MSS.* (Hist. MSS. Comm.) I, 268 Werden tells me he hath provided you not far from the Parliament. 1656 *H. PHILLIPS Church Polit.* (1676) Bix b, The first Builder is sufficiently provided by his workman to testifie his cost. 1838 *DICKENS Nick. Nick.* xliii, I... mean to look out for another situation; so provide yourselves, gentlemen, if you please.

†b. *refl.* To equip or prepare oneself, to make oneself ready, prepare (to do something, for or against something). Cf. 3 and 4. *Obs.*

c. 1489 *CAXTON Blanchardyn* xlvii, 182 [They] ordeyned & prouyded theym selfe soo, that they fered bot lyltyl Subyon or nouste. c. 1594 *CAPT. WYATT R. Dudley's Voy. W. Ind.* (Hakl. Soc.) 2 A speciall commaundment... that they shoulde generallie provide themselves to goe with hym the Sonday followinge... to the church. 1600 *SHAKS. A. Y. L.* I, i, 80 You Neice provide your selfe. 1602 *— Ham.* III, iii, 7 King... Therefore prepare you... *Guid.* We will our selues provide. 1650 *FULLER Puzah* (i. x. 212) Hence the Sea running Southward, provides itself to entertaine a nameless Brook. a. 1652 *J. SMITH Sel. Disc.* x. ii. (1856) 469 If we will provide ourselves against the devil who never miseth any opportunity... to tempt us.

8. To furnish or supply (a person, etc.) with something. Often in indirect passive. a. *Const. with*.

14... in *Tundale's Vis.* (1833) 98 With help of her. So prudently with vertu bus to provide. 1500-20 *DUNBAR Poems* xiv, 3 How that this realm, with nobillis out of nummer, Gydit, prouydit sa muny geris his bene. 1605 *CAMDEN Rem.* I Provided with all complete provisions of Warre. 1798 *SOPHIA LEE Canterb. T.* Yng. *Lady's T.* II, 167 His valet [was] provided with phosphoric matches, by which he had now lit a taper. 1841 *LANE Ari b. Nis.* I, 71 They... provide themselves with sweet cakes, bread, dates. 1860 *TYNDALL Glac.* I, xxii, 151 The waiter it en provided me with a ham sandwich.

†b. *Const. of Obs.*

1547 *BOORDE Intrud. Knowl.* xiv. (1870) 160 Howbeit the good townes be prouyded of vitels. 1556 *Au elio & Isab.* (1608) Pijj, Provide you of tiewe contricion & sad patience. 1657 *W. RAND tr. Gassendi's Life Peirece* I, 172 VISSIUS... providing him of a ship, sent him away. 1723 *J. CHAMBERS tr. Le Clerc's Treat. Archit.* I, 142 When an Architect is not provided of an able Painter fit to manage a Work of this kind.

†c. *Const. in. Sc. Obs.*

1586-7 *Rat. Stacc. Reg. Scot.* XXI, 61 [He] sall... prouyid and furnis his majesties hous and hail tabillis... in naiprie, fyreweschell, and tyneweschell.

9. *intr.* with *for*: to make provision for a person, his needs, etc. Often in indirect passive.

1535 *COVERDALE 1 Chron.* xxiii, 5 Therefore will I prouyde for him. 1597 *SHAKS. 2 Hen. IV.* v, v, 105 His wanted Followers Shall all be very well provided for. 1632 *J. HAYWARD tr. Biondi's Eromena* 194 The old King seeing his sonnes thus well match'd, & Polinero so well provided for and settled. 1764 *BURN Poor Laws* 202 Thus hath the wisdom of the nation... been employed for ages, in providing properly for the poor, and yet they are not properly provided for. 1856 *FROUDE Hist. Eng.* I, 44 The essential duty of every man being to provide honestly for himself and his family.

†**provide**, *a. Obs. rare*—¹. [ad. *L. providus* foreseeing, f. *providēre*: see **PRE-**.] Prudent, foreseeing, provident.

c. 1475 *Hrl. Contin. Higden (Rolls)* VIII, 445 He was moderate in cures temporally, provide in swynsaile [WALSINGHAM Chron. 'In curis temporalibus providus'].

provided (prə'vaɪdɪd), *ppl. a.* and *quasi-conj.* [Pa. pple. of **PROVIDE** v.]

1. *ppl. a.* †1. Prearranged, preconcerted. *Obs.* 1562 *Burgh Rec. Peebles* 4 Oct. (Rec. Soc.) 280 The greit providit slaughteris oppressioun & skaithis done to ws.

2. Prepared, ready; in a state of readiness. 1579 *L.V.V. Euphues* (Arb.) I, 16 Demosthenes being sent for to declaim amidst the multitude, staid and saide, I am not yet provided. 1594 *SHAKS. Rich. III.* III, i, 132 With what a sharpe provided wit he reasons. a. 1604 *HAMMER Chron. Ire.* (1633) 89 Hawliffe came in the night... hee hasted to Adelastanes Tent, but he was provided, and in armes. 1719 *Dr. Fox Cruise* (1840) II, xiv, 280 The company was... well armed, and provided for all events.

3. Furnished or equipped (with what is needed).

1873 *TRISTRAM Mouab* xii, 217 note, Offering an easy opportunity for a rightly provided collector. 1880 *J. E. WATT Poet. Sk.* 45 (E.D.D.), I was once weel provided, an' deemed mysel' thrang, A-boukin' an' bleachin' hail wabs o' new sheetin'.

4. That is supplied, furnished, or afforded.

1878 *BROWNING La Saisiaz* 446 Man... makes for the provided room Where the old liegion wait their fellow. 1891 *Pall Mall G.* 21 Sept. 3/2 Heligoland... was not... an average tourist's haunt. It was less... in the matter of 'provided' amusements.

b. **provided school**, a public elementary school provided by the local education authority, under the Education Act of 1902.

1902 *Act 2 Edw. VII.* c. 42 § 7 A school maintained but not provided by the local education authority. *Ibid.* § 8 Where the local education authority or any other persons propose to provide a new public elementary school. *Ibid.* That a school provided by the local education authority, or

not so provided, as the case may be, is better suited to meet the wants of a district than the school proposed to be provided. 1902 *Westm. Gaz.* 29 July 2/2 The House stopped at the management of provided schools; the whole question of the voluntary (or unprovided) schools has still to come. 1902 *Daily Chron.* 17 Oct. 5/7 What guarantee is there that they would not turn the school into a 'provided' or Board School?

II. *pa. pple.* and quasi-*conj.*

5. With the provision or condition (that); it being provided, stipulated, or arranged (that); used chiefly in legal and formal statements; also, in general use, more loosely: On the condition, supposition, or understanding (that). a. with *that*.

1460 *FOITESCUE Abs. & Lim. Mon.* xiv. (1885) 143 Provided alway, that no man be harmed... in the arerages off such livelod. 1488 *Act 4 Hen. VII. c. 3* Provided alway that this present Act begin to take effecte at the fest of Annunciacio[n] of our Lady next coming, and not afore. 1591 *SHAKS. Tw. Gent.* iv. 71, I take your offer, and will live with you. 1. Provided that you do no outrages On silly women, or p[er]vice passengers. 1637 *Deere Star Chamb.* 315 in Milton's *reop.* (Arb.) 16 Provided that they exceed not the number of Twentie. 1818 *CRUISE Digest* (ed. 2) VI. 575 Provided that, if such child should die before 21... the reversion should go to other persons named. 1879 *BAIN Higher Eng. Gram.* 113 Provided that all is safe, you may go.

b. without *that*: if only.

1600 *E. LOUNT tr. Constantino* 17 Always provided, if the Turk sent not an armie into Italy. 1604 *SHAKS. Ham. v. ii.* 210 (2nd Qu.) Now or whensoever, provided I be so able as now. 1611 *Cymb.* i. iv. 166. 1687 *A. LOVELL tr. Thevenot's Trav.* i. 60 For the common sort of People, provided you'll give them Drink enough, they are wholly at your service. 1716 *ADDISON Freeholder No. 30* 4 Provided there be a Pudding upon the Table, no matter what are the other Dishes. 1827 *BURKE Civiliz.* i. xiv. 761 The circumstances, may always be known, provided the evidence is ample and authentic. 1871 *B. STEWART Heat* 60 Provided the temperature remain the same the volume which a gas occupies is inversely proportional [etc.].

providence ('providens), *sb.* [a. F. *providence* (12th c. in *Hatz.-Darm.*), ad. L. *providentia* foresight, precaution, providence, f. *providere* to PROVIDE: see -ENCE.]

†1. The action of providing; provision, preparation, arrangement; chiefly in phrase to *make providence*, to make provision. *Obs. exc. dial.* In this sense, and in b. *dial.* also (*pro'vidans*).

1426 *LYOK. De Guil. Pigr.* 878s Yill thou lyst maken providence Off any konnyng or scyence. 1432-50 *tr. Higden* (Rolls) VII. 115 God schalle make providence [of a king] after hym [TREVISA God schal purveie, L. *provident* Deus]. a 1533 *L.D. BERNERS Gold. Bk. M. Aurel.* (1546) Rijb, Sodeyn death came to the fathers, and no providence made for the daughters. 1547 *Bk. Marchauntes* c. 6b, Henry they maye make suche providens and remedy that the vengeance of God do not fall on the poore peopel. 1878 *Cumberland Gloss.* *Providence*, a providing of victuals, etc.

†b. That which is provided; a supply, a provision. Cf. *PROVING* *tbl. sb. b.* *Obs. exc. dial.*

1390 *Earl Derby's Exp.* (Camden) 5 Expense pro providenciis contra viagium Prucie. 1475 *Bk. Noblesse* (Roach) 68 Yn every castelle... or towne he wolde hafe grete providence of vitaille, of cornys, of larde, and becoffes. 1706 *BUTLERS Providence*, Providence... In some old Records Provision of Meat or Drink. 1868 *ARKINSON Cleveland Gloss.* *Providence* (with the i long), the matters or supply provided; to wit, the meat and other eatables for a burial entertainment; the cakes... &c. for a tea-party.

2. Foresight, prevision; esp. anticipation of and preparation for the future; 'timely care' (J.); hence, prudent or wise arrangement, management, government, or guidance. Also, an instance of this.

1382 *WYCLIF Wisd. vi.* 17 In his weis it shal shewe itself to them, and gladsumli in alle providence [loss or bilore ordeynnyng, 1611 in every thought, R.V. purpose], it shal aye come to them. 1390 *GOWER Conf.* i. 203 He made Edwyn his lieutenant, and thus be providence Of alle thynges wel begon He tok his leve. 1470-85 *MALORY Arthur* i. vi. 43 The Archebisshop... by Merlyns prouydence lete purveie theene of the best knyghtes that they myghte gete. a 1548 *HALL Chron.* *Edw. IV* 189b, In compassyng and bryngyng grete thynges to passe, theyr lacke no industrie, nor providence. 1622 *BAYON Hist. Gr. Brit.* Wks. 1879 I. 706b In this matter the providence of king Henry the seventh was in all men's mouths. 1702 *Eng. Theophrast.* 379 This is not to exclude that providence of tracing premises into consequences and causes into their effects. 1867 *MAURICE Patriarch & Lawg.* vi. (1877) 134 The creature who bears His image is intended to exercise providence.

b. Regard to future needs in the management of resources; foreseeing economy, thrift, frugality.

1608 *Thywood Rape Lucresse* III. v. Wks. 1874 V. 209 We must be careful, and with providence Guide his domestic business. 1620 *E. LOUNT Hora Subs.* 105 They that spend more then they have, want government; they that spend all, Providence. 1848 *MILL, Pol. Econ.* i. xiii. §1 (1876) 117 [1] renders the increase of production no longer exclusively dependent on the thrift or providence of the inhabitants themselves. 1857 *RUSKIN Pol. Econ. Art* 8 When there should have been providence there has been waste. 1885 *L.D. PEMBROKE in Pall Mall G.* 23 May 2/1 The providence which is all that is necessary in a rich country like ours to bring material prosperity to the labouring class.

3. In full, *providence of God* (etc.), *divine providence*: The foreknowing and beneficent

care and government of God (or of nature, etc.); divine direction, control, or guidance.

13... *St. Erkenwold* 161 in Horst. *Altengl. Leg.* (1881) 269 *pe* providens of *pe* prince *pat* paradis weldes. 1382 *WYCLIF Wisd.* xiv. 3 Thou, fader, governe bi prouydence (Gr. *πρόνοια*, 1388 purveyance). c 1400 *Three Kings Cologne* 35 Almystry god, whos providence in hys ordinaunce failp not. 1483 *CAXTON Gold. Leg.* 121/2 He was in hys chylhode sette to studye whereby dyuynne prouydence he flourid in double science. 1553 *T. WILSON Rhet.* (1580) 57 Nature by her providence, mindeth vnto vs a certayne immortalite. 1587 *GOLDING De Moray* ix. (1592) 132 What else is Providence, than the will of God vnted forth with Reason, and orderly disposed by understanding? 1632 *LITTON Truv.* x. 471 Thy Bookes, are miraculously Translated by her [i.e. the Virgin Mary's] special prouydence. 1676 *W. HUBBARD Happiness of People* 36 Creation and providence are the issues of the same Being and Power. 1727 *DE FOE Hist. Appar.* iv. (1840) 38 Providence which is... the administration of heaven's government in the world. 1854 *MILMAN Lat. Chr.* iii. vii. (1864) II. 150 That the ordinary providence of God gave place to a perpetual interposition of miraculous power.

†b. The lot assigned to one by Providence.

Obs. nonce-use.

a 1661 *FULLER Worthier, Camb.* (1662) I. 152 Stephen de Fulburn... Going over into Ireland to seek his Providence (commonly nicknamed his fortune)... became... Bishop of Waterford.

4. Hence applied to the Deity as exercising present and beneficent power and direction.

1602 *WARREN Alb. Eng. xiii. lxxviii.* 321 Whom if yee Nature call (saith One) yee call him not amiss... Or Providence, whose acting power doth all begin and end. 1691 *NORRIS Pract. Disc.* 219 No Man is too little and despicable for the notice of Providence, however he may be overlook'd by his Fellow-Creatures. 1704 *DE FOE in 15th Rep. Hist. MSS. Comm.* App. iv. 88 What Providence has reserved for me he only knows. 1842 *ALISON Hist. Europe* lxxviii. X. 1013 Moreau expressed a fact of general application... explained according to the irregular ideas of the French Revolution, when he said that 'Providence was always on the side of dense battalions'. 1894 *BARING-GOULD Queen of L.* II. 59, I am not one to fly in the face of Providence.

b. *transf.* A person who acts or appears in the character of Providence. *colloq.*

1856 *EMERSON Eng. Traits, Aristot.* Wks. (Bohn) II. 86 'They might be little Providences on earth', said my friend, 'and they are, for the most part, jockeys and fops'. 1886 *P. S. ROBINSON Valley Trot.* Tres 28 Man is the Providence of the goose and... it is well that we should... generously condescend to sympathy with it. 1895 *Daily News* 30 May 6/5 The Providence of the officers who were sent to stay at St. Petersburg was Mlle. Georges.

5. An instance or act of divine intervention; an event or circumstance which indicates divine dispensation. *special providence*, a particular act of direct divine intervention.

1643 [ANGIER] *Lancash. Valley of Achor* 1 Gods eternall Counsellis... are in time turned into... Prayers, Prayers into Providences, and Providences into Prayers. 1651 *MHQ. OMBONDE in Nicholas Papers* (Camden) I. 279 The King being by an eminent and high providence escaped the bloody hands of the Rebels is arrived at Paris. 1719 *DE FOE Crusoe* I. x. 125 How can he sweeten the bitterest providence? 1860 *PEARSON Early & Mid. Ages Eng.* 233 Here the event would no doubt be classed by some modern religionists under the head of special providences. 1871 *TYNDALL Frogm.* Sc. (1879) II. ii. 11 The miracle of the Thundering Legion was a special providence.

b. Applied esp. to a disastrous accident, or fatality, regarded as an act of God. *Obs. or dial.*

1740 *WESLEY Wks.* (1872) I. 200, I was informed of an awful providence. 1809 *KENDALL Trav.* lxxv. III. 292 The phrase a providence... in New England... appears to be more frequently used for that which is disastrous but which is at the same time to be regarded and submitted to as the act of God. 1814 *Connecticut Courant* 1 Mar. 3/2 Distressing Providence... On Wednesday last as John N. Olcott... was seating on Connecticut river... he... broke in and drowned.

Hence 'providence v. nonce-wd., *trans.* to act the part of Providence towards; to be a providence to.

1901 *Pall Mall G.* 28 May 4/1 She grew up in an obscure country parsonage... providenced by a high-minded... father.

†*providency*. *Obs. rare.* [ad. L. *providenti-a*: see *prec.*] The quality of being provident; foresight and preparation; = *prec.* 2.

1600 *W. WATSON Decadron* (1602) 258, I have... often doubted whether Saint Ambrose deserved more commendation for his providence in attempting such a matter: or the emperor for his patience and obedience in taking the same in so good part. 1847 *MORSON Hist.* II. 204 Yet we have not been wanting in providency. 1644 *DIGBY Nat. Bodies* xxviii. §1. 327 Of prescience of future cunctes, providencies, the knowing of things never seene before; and such other actions.

provident ('providant), *a.* [ad. L. *providens*, -entem, pres. pple. of *providere* to PROVIDE. Cf. F. *provident* (16th c. in *Codef.*)]

1. Foreseeing; that has foresight of and makes provision for the future, or for some future event; exercising or characterized by foresight. *provident society* = *friendly society* (FRIENDLY a. 8). Also *provident club*.

1429 *Pol. Poems* (Rolls) II. 143 Provident, with Brutus Cassius, Hardy as Hector, what time doth require. 1487 [implied in *PROVIDENTLY*]. 1548 *UDALL Erasim. Par. Luke* vi. 67b, He is like to a provident and circumspect builder, that buildeth his house, nor for a vain bragge or shewe only. 1663 *BOYLE Usef. Exp. Nat. Philos.* i. ii. 50 By

Solomon God sends the Sluggard to school to the Ant, to learn a provident Industry. 1694 *ADDISON Virg. Georg.* iv. 189 Each provident of cold, in summer flies Thro' fields and woods to seek for new supplies. 1783 *BURKE Affairs India* Wks. XI. 315 The order... was (for its matter) provident and well considered. 1846 *Lit. Gaz.* 7 Nov. 957/2 National Provident and Benevolent Institution. 1847 *MARRYAT Childr. N. Forest* xxi, It was fortunate that Humphrey had been so provident in making so large a quantity of hay. 1858 *M. TUCKETT Diary* 12 Nov. (c. 1975) 18 We betook ourselves to the Polytechnic where a stall awaited us, in the sale for the Provident Society. 1869 *Bradshaw's Railway Manual* XXI. App. 98 The United Kingdom Railway Officers' and Servants' Association, and Railway Provident Society. 1968 *A. BRYANT Hist. Brit. United Provident Assoc.* 2 During the 'twenties and 'thirties many Provident Clubs became linked with particular hospitals. 1973 *P. GOSSEN Self-Help* vi. 49 During the first half of May, 1836, petitions were received by the Commons from a number of societies in South Lancashire... These included... the Provident Society of Salford. 1878 *P. SUTCLIFFE Oxf. Univ. Press* II. xii. 63 He started a provident club for medical aid and a clothing club.

2. Economical; frugal, thrifty, saving.

1596 *Br. W. BARLOW Three Serms.* iii. 133 Let the poore be provident in a plentiful harvest. 1655 *JER. TAYLOR Guide Devot.* (1719) 54 Thou wilt be more provident of thy Time and of thy Talent. 1700 *DRYDEN Pal. & Arcite* III. 527 A Prince so gracious and so good, So just, and yet so provident of blood! 1743 *BULKELEY & CUMMINS Voy. S. Seas* 124 If we are not exceedingly provident in regard to serving out Provisions, we must all inevitably starve. 1888 *F. HUME Mmc. Midst* i. iii, He will always be poor, because he never was a provident man.

providential (prō'viden[sh]l), *a.* (*sb.*) [f. L. *providentia* PROVIDENCE + -AL]. So F. *providentiel* (18-19th c. in *Hatz.-Darm.*)]

†1. Of the nature of or characterized by Providence or foresight; provident, prudent. *Obs.*

1663 *BUTLER Hud.* i. i. 758 Sure some mischief will come of it Unless his providential wit Or force we avertence at. 1673 *H. STURBE Further Vindict. Dutch War* 17 Neither is it providential for a weak Prince... to run Precipitously into a War. 1794 *T. TAYLOR Pausanias* I. 33, I especially admire... his providential care with respect to future contests. 1845 *HOOD Open Question* xiii, The tender Love Bird—or the filial Stork? The punctual Crane—the providential Raven?

2. Of, pertaining to, or ordained by divine providence. †*providential right*, the 'divine right' of kings (*obs.*).

1648 *Eikon Bas.* x. 83, I do not think that I can want any thing which providential necessity is pleased to take from me. 1677 *HALL from Orig. Mon.* i. 24 The necessity of a Providential Regiment of the parts of the Universe. 1695 *J. SAGE The Article* Wks. 1844 I. 345 Sure I am, here [i.e. in Knox's Letter] is the providential right, so plainly taught that no glosses can obscure it. 1736 *BUTLER Anal.* i. v. Wks. 1874 I. 94 A providential disposition of things. 1768 in *Picton L. pool Munic. Rec.* (1886) II. 277 Unless sickness or other providential accident hinders him. 1869 *M. PATTISON Sermon* (1885) 187 The existence of a first cause and providential governor.

b. That is, or is thought to be, by special interposition of providence; opportune; lucky, fortunate. (Now the most common use.)

1719 *DE FOE Crusoe* (1858) 264, I knew nothing that night of the supply I was to receive by the providential driving of the ship nearer the land. 1790 *BURKE Fr. Rev.* 25 [It] was by them considered as a providential escape. 1856 *KANS Arcet. Expt.* II. i. 27 Petersen caught another providential fox.

b. *sb.* A providential occurrence; an interposition of Providence. *rare.*

1658-9 in *Burton's Diary* (1828) III. 267 If you consider affairs in the providentials; all providences have rather bent that way. 1893 *Boston Congregationalist* 14 Sept., Providentials... To consider whether certain particular occurrences were specially prepared to fit certain exigencies.

Hence *providentialist*, *nonce-wd.*, a maintainer of the 'providential' or divine right of sovereigns.

1695 *J. SAGE The Article* Wks. 1844 I. 343 [Knox] may chance to be honoured as a Father by the Providentialists.

providentialism. [f. PROVIDENTIAL *a.* + -ISM.] The belief that events are predestined, whether by God or by fate.

1927 *J. S. HUXLEY Relig. without Revelation* 18 The release of God from the anthropomorphic disguise of personality also provides release from that vice which may be termed Providentialism. 1934 *H. G. WELLS Exper. Autobiog.* I. v. 264 The ultimate adoption of the Five Year Plan and its successor has been the completest change ever from the providentialism of Marx to the once hated and despised method of the Hoplites. Cf. C. S. LEWIS *Eng. Lit.* in 16th Cent. i. ii. 148 His [sc. Fabian's] philosophy of history is a simple Providentialism which leaves him completely agnostic about second causes.

providentially, *adv.* [f. PROVIDENTIAL *a.* (*sb.*) + -LY.] In a providential manner.

†1. With foresight; providently, prudently. *Obs.*

1614 *RALEIGH Hist. World* v. i. §10. 366 The victuallers, which the Consul Iunius, more hastily than providentially, had sent before him towards Lilybæum. 1619 *J. CHAMBERLAIN in Cr. & Times Jas. I* (1848) II. 184 Enabling himself to live more providentially hereafter.

2. By the ordination of divine providence. 1651 *G. W. I. Cowel's Inst.* 64 But there is another Species of accention which is providentially natural and is made by the cooperation of divine and humane nature from whence a property is acquired. 1654 *CROMWELL Speech* 12 Sept. in *Carlyle*, A desire... to be quit of the power God had most providentially put into my hands, before he called me

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)	
)	
Application of SBC Communications,)	
Inc., Pursuant to Section 271 of the)	
Telecommunications Act of 1996 to)	CC Docket No. 97-121
Provide In-Region, InterLATA Services)	
in Oklahoma)	

AFFIDAVIT OF ROBERT E. HALL ON BEHALF OF MCI

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I. Background

1. I serve as Professor of Economics at Stanford University and also Senior Fellow at Stanford's Hoover Institution. I received a Ph.D. in economics from the Massachusetts Institute of Technology in 1967. I have been elected a fellow of the American Academy of Arts and Sciences and a fellow of the Econometric Society. I have published 7 books and numerous articles in several areas of applied economics. I have extensive experience in the economics of telecommunications, computers, and software. Recently I served as an expert for the Department of Justice in its case against Microsoft and in its opposition to Microsoft's proposed merger with Intuit. Further information about my professional activities is in my *curriculum vitae*, Appendix C to this affidavit.

II. Introduction and Summary

2. I have been asked by MCI to prepare a discussion of the economic issues raised by Southwestern Bell's application to provide in-region long-distance services in Oklahoma.

3. In summary, my findings are:

- The performance of the long-distance industry has been outstanding in the 13 years since the beginning of open competition in 1984. The telephone consumer has benefited from large declines in prices and improvements in quality.
- The price of long-distance calls has continued to fall in recent years, as carriers have introduced increasingly better pricing plans. Lower prices have resulted from productivity improvements, intensification of competition, and lower access charges.
- The price of the typical long-distance call has fallen dramatically in relation to the standard rates set by carriers. As a result, analyses of the performance of the industry based on standard rates fail to measure the full benefits of recent changes in the industry.
- Concentration in the long-distance industry has fallen in recent years. WorldCom has joined AT&T, MCI, and Sprint as a major national carrier with a full network. Other smaller carriers have grown dramatically as well. Growing competition has eroded AT&T's market share to not far above 50 percent.
- Barriers to entry in long distance are minimal. If the larger carriers failed to offer competitive prices to their customers, smaller carriers could expand and other firms could enter the industry to take advantage of the profit opportunity. Indeed, this has already happened—there is almost no extra profit left in the industry to compete away.
- Critical analyses of the performance of the industry offered by Southwestern Bell's expert economists are based on faulty data and incomplete analyses.
- Today's long-distance industry is substantially competitive, with price not far above cost.
- Conditions in local telephone markets are important for long distance because local carriers provide access to the long-distance network for most telephone users.
- The local telephone market in Oklahoma and elsewhere remains close to a monopoly. Few telephone customers have choices among cost-effective alternatives to reach their long-distance carriers. It is unlikely that alternatives

will develop soon based on the construction of new local networks. Prospects for local competition based on reselling Southwestern Bell's local service or for unbundling elements of its local network on reasonable terms are uncertain.

- Long-distance carriers rely on the cooperation of the local carriers who transmit their calls at both ends. Cooperation has been outstanding since divestiture. But the control of long-distance service by local carriers invites a breakdown of cooperation, to the detriment of the consumer.
- Cooperation breaks down when a local carrier takes control of part of the long-distance market because the local carrier is the rival of the other long-distance carriers. It is unrealistic to expect a firm to cooperate with its rivals.
- Examples of the failure of cooperation abound in the telephone business. All over the country, local carriers have tried to inhibit their rivals in local toll, voicemail, and payphone markets.
- Although regulators may be able to control the worst failures of cooperation, they cannot restore the high levels of cooperation that exist when local carriers are not rivals in the long-distance market.
- Experience in Connecticut shows that control of a long-distance carrier by a local telephone company is harmful to the consumer. The local company does not offer favorable rates for long distance, and it has withdrawn cooperation in billing for its largest rival, AT&T.
- Lack of competition in Oklahoma's local telephone market, together with the breakdown of cooperation between Southwestern Bell and the independent long-distance carriers that will occur once Southwestern Bell controls a long-distance carrier, imply that it would be unwise to depart from the principle that has worked so well for the past 13 years: Local telephone companies should remain independent of long-distance carriers.
- In recommending that Southwestern Bell be allowed to control a long-distance carrier, the company's expert economists fail to consider the harmful effects of control on cooperation and the costs that consumers will pay when cooperation declines. They also misunderstand the extent of competition in today's long-distance market when they project that control of a carrier by Southwestern Bell would have a favorable effect on competition.
- In particular, WEFA's analysis of the gains to Oklahoma from Southwestern's entry into long distance is faulty. The benefits that WEFA ascribes to

increased competition in long distance would, in fact, occur, to the extent such benefits exist at all, only with increased competition in local service. The WEFA study is irrelevant to this filing.

III. Competition and Performance in Long Distance

A. Introduction and Summary

4. I have carried out a study of competition in the long-distance market using standard economic analysis. I find that the long-distance industry is substantially competitive. The industry's performance has been exceptional since divestiture in 1984—long-distance carriers have delivered steady improvements in service at continually declining prices.

5. The long-distance market in the United States is served by four larger carriers—AT&T, WorldCom, MCI, and Sprint—together with numerous others who offer services on partial national networks, facilities leased from other owners, or who resell services purchased in bulk from other carriers. In my opinion, the evidence shows strongly that these carriers compete rather than collude. The result of this competition has been benefits to the consumer in the form of substantial reductions in the price of long-distance service as well as numerous technical improvements and the development of new services.

6. The primary evidence in favor of the hypothesis of strong competition and superior performance is the behavior of prices in the long-distance market. Proper measures of price—ones that take appropriate account of the shift toward highly favorable bargain pricing plans—show huge reductions in prices. They also suggest that competition has brought the price of long distance close to the level of cost. The structure of the industry is conducive to strong competition. There are no important barriers to entry. Because there are fluid markets for basic long-distance capacity, entry can take many different forms.

B. Performance of the Long-Distance Industry

7. Increasing competition in the long-distance industry has delivered important benefits to the American economy. Traditionally, long-distance service was available only from AT&T. Regulation prevented other companies from offering long-distance service. During the 1970s, MCI waged an uphill battle to obtain the right to offer service in competition with AT&T, but there was still little rivalry in the industry by the early 1980s.

8. Divestiture in 1984 started the transition to competition in long distance. The new policy eliminated the economic incentive for the local telephone company to favor the long-distance carrier owned by the company's parent. Divestiture brought equal access, under which telephone subscribers have a symmetric choice among all long-distance carriers. Subscribers use the same convenient method to dial long-distance calls for all carriers. The FCC has made other contributions to creating a favorable environment for competition by expanding equal access to independent local telephone companies, by requiring portability of 800 numbers, and controlling some anti-competitive practices.

9. The mid-1980s saw an explosion of service by long-distance carriers other than AT&T. During this time, MCI and Sprint expanded nationwide networks and gained acceptance as alternatives to AT&T. Divestiture was successful at stimulating major new investments with corresponding increases in market shares by new entrants to the long-distance market.

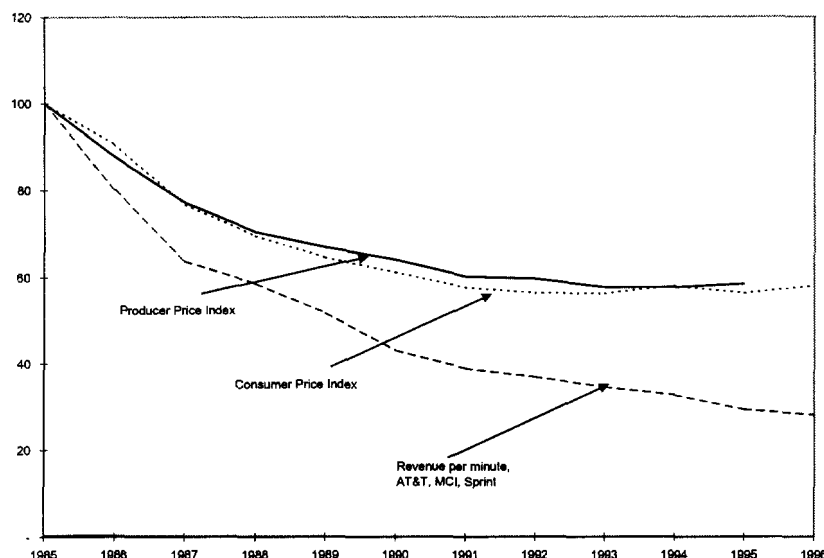
C. Prices for Long Distance

10. The public has gained substantially from this structural transformation of the long-distance industry. The primary indicator of these gains is the sharply declining price of long-distance service. Prior to the introduction of competition in long distance, the price was stable in relation to prices in general. With the advent of competition, particularly with the divestiture of long-distance services from local telephone companies at the beginning of 1984, and the provision of equal access to competing long-distance carriers, the price of long-distance service fell precipitously.

11. In my opinion, the best available way to measure the price of long distance is by revenue per minute, the ratio of toll call revenue (billed by the minute) to the

number of billed minutes. Although revenue per minute is not a perfect measure of the price of long distance, it is the best available measure.¹ Figure 1 shows revenue per minute for AT&T, MCI, and Sprint, stated in 1996 dollars, adjusted by the GDP deflator. To avoid mix effects, these calculations exclude international calls. Figure 1 shows that revenue per minute has declined substantially and that the declines are continuing to occur.

Figure 1. Index of Revenue per Minute, Relative to the General Price Level

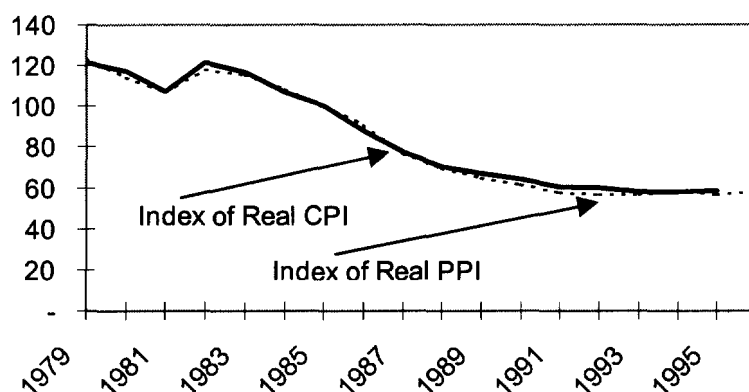


12. Over the period from the late 1970s to the present, only the price indices compiled by the U.S. government are available as consistent measures of prices. Figure 2 shows the history of the price of long-distance services as measured by the official price indices of the U.S. government. The indices are, first, the component

¹One of the potential problems in revenue per minute as a measure of prices is mix effects—revenue per minute could rise even though each type of call was cheaper per minute because customers were making a larger fraction of expensive calls, such as credit-card calls. I looked at confidential MCI data by detailed product category to determine that mix effects are a minor influence on MCI's revenue per minute; essentially all the decline comes from lower prices for calls and none from changes in the mix of calls. It is entirely reasonable to conclude that mix effects are also a minor influence on revenue per minute industry-wide.

of the Consumer Price Index (CPI) for interstate toll calls and, second, the component of the Producer Price Index (PPI) for interstate message toll service. Both indices exclude international calls. Figure 1 presents them as ratios to a general price index, the implicit deflator for Gross Domestic Product (GDP).

Figure 2. Government Indices of Long-Distance Prices Relative to the General Price Level



13. The decline in the CPI measure, relative to the GDP deflator, was 33 percent between 1983 and 1987, and the decline in the PPI was 34 percent. The CPI declined by 24 percent between 1987 and 1996, and the PPI declined 24 percent between 1987 and 1995 (the PPI after June 1995 is inconsistent with prior data).

14. Three factors were responsible for the sharp decline in the price of long-distance service relative to the general price level over the past decade: competition made possible by divestiture, improvements in productivity, and declining access charges paid to local telephone companies.

15. Although these data from the Bureau of Labor Statistics (BLS) show a sharp decline in the long-distance prices, they do not present a complete picture of the decline in long-distance prices. The evidence suggests that BLS data understate recent declines in those prices. Construction of price indices for products such as long-distance service presents a serious challenge. For the CPI, the BLS prices a fixed basket of calls placed by households. It applies the standard rates, without considering any more favorable pricing plans such as flat rates. Here, the CPI's

long-distance index departs from the standard procedures of the CPI because it is not an index of transaction prices. The long-distance component of the CPI understates price declines that occur when more favorable plans are introduced. In addition, the CPI's procedure for the introduction of new sellers and new products understates price declines.² In light of the extensive use of pricing plans that are far more attractive than the standard rates in the long-distance market since divestiture—for example, nearly 80 percent of MCI's customers use a plan that is cheaper than standard rates—the omission of these factors from the CPI has led to a substantial understatement of price decreases. An FCC document warns users that the CPI (and the PPI) are unreliable measures for long-distance prices: "Price indexes are less reliable when industries are changing rapidly." The FCC document further states that "Because of these sorts of difficulties, measures of average revenues are sometimes used as alternatives to price indexes."³

16. Measurement challenges in the PPI are even greater. Products included in the interstate MTS index were those in existence in the mid-1970s. The only long-distance carrier included in the index is AT&T. Moreover, the index specifically excludes business price plans that are better than standard rates. As a result, the BLS has reconstituted the PPI for long distance as of July 1995, and there are no data for the PPI after July 1995 that are comparable to the historical series. The new PPI for long distance is based on a new sample and includes a greater variety of services not included in the old series.

D. The Role of Declining Access Charges in Lowering Long-Distance Prices

17. Long-distance carriers pay local telephone companies access charges for carrying long-distance calls from the caller's business or home to the point where the long-distance carrier picks up the call. They pay a second access fee to a local telephone company to deliver the call to its ultimate destination. During the

²A good example is the following: Prior to 1987, the CPI included only AT&T calls. When other carriers were added to the index in 1987, the new index was adjusted so that it had the same value as the old index in 1987. Although the cost of a basket of calls was lower if some of the calls were made on other carriers, the effect was eliminated by a multiplicative adjustment. Hence the consumer benefit from the lower prices of other carriers before 1987 never was recorded in the CPI.

³ Section 5, Price Index Limitations of *Price Indexes for Telephone Services*, FCC Trendline Report, Industry Analysis Group, Common Carrier Bureau, Federal Communications Commission.